

potential vs kinetic NRG.key

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1. $KE = \frac{1}{2}mv^2$
 $KE = \frac{1}{2}(60\text{ kg})(8\frac{\text{m}}{\text{s}})^2$
 $KE = 30 \cdot 64$
 $KE = 1,920\text{ J}$
 $PE = m \cdot g \cdot h$
 $PE = 60\text{ kg}(9.8\frac{\text{m}}{\text{s}^2}) \cdot 0\text{ m}$
 $PE = 0\text{ J}$
 $ME = PE + KE$
 $ME = 0\text{ J} + 1,920\text{ J}$
 $ME = 1,920\text{ J}$

2. ME STILL = 1,920 J
 $PE = m \cdot g \cdot h$
 $PE = 60\text{ kg} \cdot 9.8\frac{\text{m}}{\text{s}^2} \cdot 1\text{ m}$
 $PE = 588\text{ J}$
 $KE = ME - PE$
 $KE = 1,920 - 588$
 $KE = 1,332\text{ J}$
 $KE = \frac{1}{2}mv^2$
 $1,332 = \frac{1}{2} \cdot 60\text{ kg} \cdot v^2$
 $1,332 = 30 \cdot v^2$
 $\frac{1,332}{30} = v^2$
 $44.4 = v^2$
 $6.6 = v$

3. PE = _____
 KE = _____
 ME = _____
 v = _____
 h = _____

1 m


m = 60 kg
v = 8 m/s


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1. $KE = \frac{1}{2}mv^2$
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 $ME = 0\text{ J} + 1,920\text{ J}$
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2. ME STILL = 1920 J
 $PE = m \cdot g \cdot h$
 $PE = 60\text{ kg} \cdot 9.8\frac{\text{m}}{\text{s}^2} \cdot 1\text{ m}$
 $PE = 588\text{ J}$
 $KE = ME - PE$
 $KE = 1,920 - 588$
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 $KE = \frac{1}{2}mv^2$
 $1,332 = \frac{1}{2} \cdot 60\text{ kg} \cdot v^2$
 $1,332 = 30 \cdot v^2$
 $\frac{1,332}{30} = v^2$
 $44.4 = v^2$
 $6.6 = v$

3. $PE = m \cdot g \cdot h$
 $PE = 60\text{ kg} \cdot 9.8\frac{\text{m}}{\text{s}^2} \cdot 3\text{ m}$
 $PE = 1,764\text{ J}$
 $KE = 1,920 - 1,764 = 156\text{ J}$
 $PE = 1,764\text{ J}$
 $KE = 156\text{ J}$
 $ME = 1,920\text{ J}$
 $v = 2.28\frac{\text{m}}{\text{s}}$
 $h = 3\text{ m}$
 $156\text{ J} = \frac{1}{2} \cdot 60\text{ kg} \cdot v^2$
 $156 = 30 \cdot v^2$
 $\frac{156}{30} = v^2$
 $5.2 = v^2$
 $2.28 = v$

1.  $m = 60\text{ kg}$
 $v = 8\text{ m/s}$

2.  1 m

3. 

107%